IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	D. Axinte et al.	Attorney Docket No.:	KIML118239
Application No.:	10/016,937	Group Art Unit:	3742
Filed:	December 14, 2001	Examiner:	J. A. Jeffery
Title:	CORDLESS SOLDERING IRON		

INVENTOR'S DECLARATION UNDER 37 C.F.R. § 1.132

Seattle, Washington 98101

October 15, 2002

TO THE COMMISSIONER FOR PATENTS:

I, Dragos Axinte, declare as follows:

1. I am a co-inventor named in the above-identified patent application. My educational and work background is as follows: I received a Bachelor of Arts degree in English with concentrations in Chemistry and Physics from the University of Washington in 1999. I am a founder of and the President of Hyperion Innovations Inc., a private company devoted to developing and marketing products based upon the use of low-current electrical heating elements.

2. I have carefully considered the Office Action dated April 15, 2002 in the above-identified application.

3. The following tests were conducted to evaluate and compare the efficiency and effectiveness of various graphite based compositions for use as heating elements in a cordless soldering iron. The tests were conducted under my supervision.

4. The tests were conducted by manufacturing tips from each material and attempting to use them as a soldering iron tip. The results of the tests on useful materials are shown first:

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Electrical Resistivity (μOhm-cm.)	Thermal Conductivity (BTU/hr-ft-°F)	Flexural Strength (psi)	Density (g/cc)
3,400	5-10	6,050	1.58
3,600	5-10	5,800	1.65
3,400	5-10	6,000	1.58

The following materials were also tested for use in a cordless soldering iron but are not useful for such an application. The results in bold illustrate the properties that fall outside the claimed ranges:

Electrical Resistivity (μOhm-cm.)	Thermal Conductivity (BTU/hr-ft-°F)	Flexural Strength (psi)	Density (g/cc)
1,470	**55**	12,500	**1.78**
250	**100**	17,000	**3.12**
2,460	**35**	14,000	**1.77**
2,000	**40**	7,500	1.66
1,250	**65**	6,500	1.71
700	**100**	2,900	1.75
1,400	**Unknown**	4,200	1.68-1.74
4,700	**Unknown**	2,500	1.51
Unknown	**32**	7,500	**1.76**

5. The tip materials that fall outside the claimed range of properties fail to perform adequately as cordless soldering iron tips for a variety of reasons, including but not limited to: the tips do not reach an adequate temperature, or too much heat is dissipated into the tip, or they retain too much heat after removal from the work piece. In each case, the unsuccessful materials were graphite based.

6. As shown by the material properties described above, graphite and graphite containing electrodes can have a wide variety of material properties. The claimed properties reach adequate temperatures, heat and cool quickly, and otherwise work well as electrodes for a cordless soldering iron.

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All statements made herein and of my own knowledge are true, and all statements made on information and belief are believed to be true. Further, these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application or any patent issued thereon.

Respectfully submitted,

Dated: 10/14/02

Dragos Axinte

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